

Serial No.: 10/042,556
 Group Art Unit: 2644
 Examiner: Daniel Swerdlow

In the Claims:

1 (Currently Amended). An apparatus for providing power to a plurality of line driver devices in a communication system: each respective line driver device having a respective output for driving a communication loop of said communication system at least one line driver device in a communication system; each respective line driver device of said at least one line driver device having a respective inherent internal voltage drop and having a respective output terminal coupled with a respective communication loop; each said respective communication loop requiring a respective minimum operational voltage at said respective output terminal; the apparatus comprising:

- (a) a power supply device coupled with each of said line driver devices for providing power supply tailored to each said line driver devices at least one control device; said at least one control device being coupled with said respective output terminal of each said respective line driver device; and
- (b) a controller coupled with said power supply and having an input for receiving a signal indicative of an operating condition for said communication loops, said controller further adapted to determine a minimum drive power for a respective communication loop responsive to receiving an operating condition signal thereof and cooperative with said power supply device for providing power to an associated line driver device for effectuating said minimum drive power at least one power supply device; said at least one power supply device being coupled with said at least one control device and with each said respective line driver device; said at least one power supply device cooperating with said at least one control device to deliver a respective supplied voltage to each said respective line driver device; said respective supplied voltage being substantially equal with said respective minimum operational voltage less said respective inherent internal voltage drop for each said respective line driver device.

2 (Currently Amended). An apparatus for providing power to at least one line driver device in a communication system as recited in Claim 1 wherein said at least one control device is a respective control device coupled with each said line driver devices respective output terminal.

3 (Currently Amended). An apparatus for providing power to at least one line driver device in a communication system as recited in Claim 1 wherein said at least one control device is a single control device coupled with each said line driver devices respective output terminal.

4 (Currently Amended). An apparatus for providing power to at least one line driver device in a communication system as recited in Claim 1 wherein said at least one power supply device is a respective power supply device coupled with each said respective line driver device.

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5 (Currently Amended). An apparatus for providing power to at least one line driver device in a communication system as recited in Claim 1 wherein said at least one power supply device is a single power supply device coupled with each said respective line driver device.

6 (Currently Amended). An apparatus for providing power to at least one line driver device in a communication system as recited in Claim 1 wherein said controller further includes respective inputs for receiving a signal indicative of an inherent internal voltage drop for each respective line driver device for determining a power supply tailored in consideration thereof wherein said at least one power supply device is a respective power supply device coupled with each said respective line driver device.

7 (Currently Amended). An apparatus for providing power to at least one line driver device in a communication system as recited in Claim 1 wherein said operating condition for each communication loop is performed during a training cycle conducted at start-up3 wherein said at least one power supply device is a respective power supply device coupled with each said respective line driver device.

8 (Currently Amended). An apparatus for providing power to at least one line driver device in a communication system as recited in Claim 1 wherein said controller is further adapted to poll each communication loop for determining said operating condition 2 wherein said at least one power supply device is a single power supply device coupled with each said respective line driver device.

9 (Currently Amended). An apparatus for providing power to at least one line driver device in a communication system as recited in Claim 1 wherein said operating condition includes data rate, loop length, and load requirements 3 wherein said at least one power supply device is a single power supply device coupled with each said respective line driver device.

10 (Currently Amended). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system; each selected line driver device having a respective inherent internal voltage drop; each selected line driver device being coupled with a respective communication loop and providing a respective minimum operational voltage to said respective communication loop; the apparatus comprising:

- (a) a control means for controlling supply voltage to said selected line driver devices; said control means being coupled with said selected line driver devices. said control means further for receiving an operating condition for said respective communication loops and responsive thereto for determining a corresponding line driver device voltage for effectuating said respective minimum operational voltage; and
- (b) a power supply means; said power supply means being coupled with said control means and with said selected line driver devices; said power supply means cooperating with said control means to deliver said corresponding line driver device voltage a respective supply voltage to respective said selected line driver devices; said respective supply voltage

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~~being at least equal with said respective minimum operational voltage less said respective inherent internal voltage drop for each said respective selected line driver device.~~

- 11 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said control means is a respective control device coupled with each said respective selected line driver device.
- 12 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said control means is a single control device coupled with each said respective selected line driver device.
- 13 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said power supply means is a respective power supply device coupled with each said respective selected line driver device.
- 14 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said power supply means is a single power supply device coupled with each said respective selected line driver device.
- 15 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 11 wherein said power supply means is a respective power supply device coupled with each said respective selected line driver device.
- 16 (Currently Amended). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said control means further for receiving a signal indicative of an inherent internal voltage drop for each selected line driver device used in combination with said operating condition for determining said corresponding line driver device voltage 12 wherein said power supply means is a respective power supply device coupled with each said respective selected line driver device.
- 17 (Currently Amended). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said control means is further adapted to poll each communication loop for determining said operating condition 11 wherein said power supply means is a single power supply device coupled with each said respective selected line driver device.

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18 (Currently Amended). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said operating condition includes data rate, loop length, and load ~~12~~ wherein said power supply means is a single power supply device coupled with each said respective selected line driver device.

19 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said control means is coupled with said selected line driver devices via individual control lines intermediate each respective said selected line driver device and said control means.

20 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said control means is coupled with said selected line driver devices via a communication bus intermediate said selected line driver devices and said control means; each respective said selected line driver device being assigned a respective address; said control means identifying information received via said communication bus according to an accompanying respective said selected line driver address.

21 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said control means is coupled with said selected line driver devices via individual communication lines intermediate each respective said selected line driver device and said control means.

22 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said control means is coupled with said selected line driver devices via a multiplexer for pollingly determining extant operational voltage for said respective communication loops.

23 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said power supply means is coupled with said selected line driver devices via a control bus intermediate said selected line driver devices and said power supply means; each respective said selected line driver device being assigned a respective address; said power supply means identifying a destination for information dispatched via said control bus according to an accompanying respective said selected line driver address.

24 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said power supply means is coupled with said selected line driver devices via individual communication lines intermediate each respective said selected line driver device and said power supply means.

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25 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said power supply means is coupled with said selected line driver devices via a multiplexer for pollingly identifying a destination for information dispatched from said power supply means.

26 (Original). An apparatus for providing power to selected line driver devices of a plurality of line driver devices in a communication system as recited in Claim 10 wherein said power supply means further includes a plurality of power supply lines; each said power supply line of said plurality of power supply lines carrying a predetermined power supply potential; said power supply means and said control means cooperating to selectively couple each respective selected line driver device to an appropriate power supply line of said plurality of power supply lines; said appropriate power supply line carrying said power supply potential sufficient to at least match said respective supply voltage.